Template Week 3 – Hardware

Student number: 568403-Kiarash Delavar-SR

Assignment 3.1: Examine your phone

What processor is in your phone?
Exynos 1380 (5 nm) Chipset

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?

ARM Architecture-ARMv8.2-A

How much RAM is in it?

8 GB RAM

How much storage does your phone have?

256 GB Internal Storage

What operating system is running on your phone?

Android

Approximately how many applications do you have installed?

50 Applications

Which application do you use the most?

Whatsapp-Microsoft Teams-Skype-Linkedin-Telegram

Can your phone be charged with what type of plug?

Type-C

Which I/O ports can you visually see on your phone?

1- **USB-C Port**
2- **SIM Card Tray**
3- **Microphone Holes**

Assignment 3.2: Examine your laptop

What processor is in your laptop?

13th Gen Intel Core i7-13620H

To which architecture family does this processor belong? In other words, which Instruction Set Architecture (ISA) is used?

X86 Architecture - x86-64

How much RAM is in it?

16 GB RAM

How much storage does your laptop have?

1TB SSD Storage

Which operating system is running on your laptop?

Microsoft Windows 11 Pro

Approximately how many applications do you have installed?

A lot – It's about 60 Applications

Which application do you use the most?

LinkedIn – WhatsApp – Telegram – IntelliJ – Word

Can your laptop be charged with what type of plug?

240W AC adapter - Output: 20V DC, 12A, 240W

Input: 100~240V AC, 50/60Hz universal

Which I/O ports can you visually see on your laptop?

1- Power Connector
2- HDMI Port
3- USB 3.2 Gen 2 Type-C
4- USB 3.2 Gen 1 Type-A
5- 3.5mm Audio Combo Jack

Assignment 3.3: Power to the laptop

What is the input voltage?

100-240V ~ 50-60Hz 3.5A

What is the output voltage?

20.0V – 12.0A 240.0W

How many watts can your power adapter deliver?

The maximum power delivery is 240W

Is the input voltage AC or DC?

The input voltage is AC.

Is the output voltage AC or DC?

The output voltage is DC

AC/DC what is that?
AC stands for ''Alternating Current'' which can be found in household power supply.

DC stands for "Direct Current" is a current flow in a single direction and Required for most electronics.

If you reverse the polarity of the output voltage, is that bad for your laptop?

Yes, reversing the polarity of the output voltage can damage my laptop. Laptops are designed to receive power with the correct polarity.
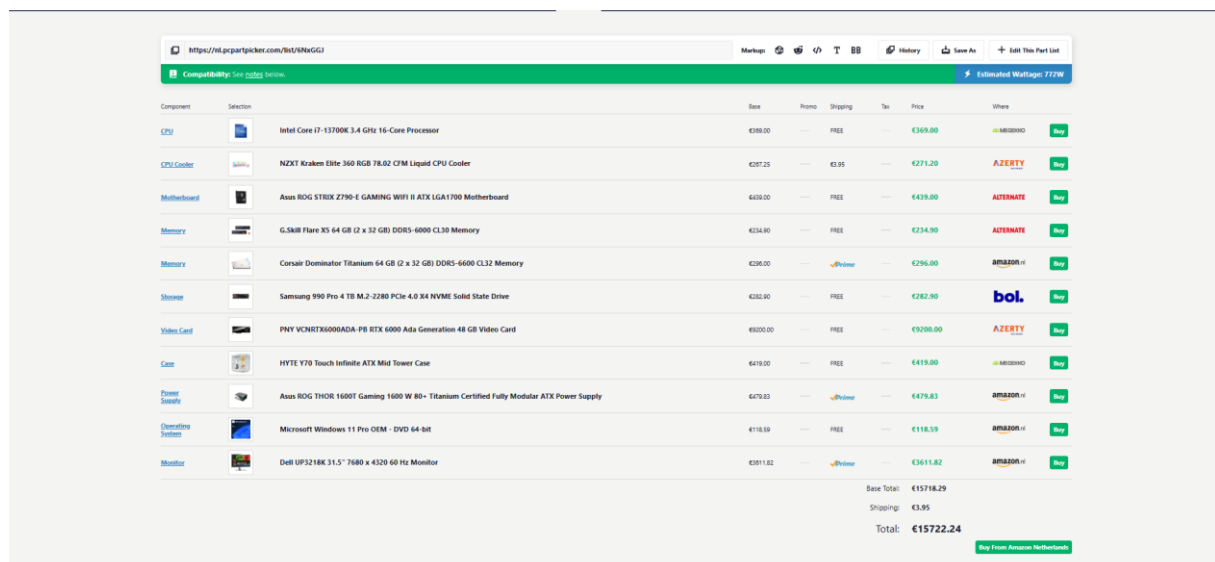
You forgot your power adapter, your laptop normally needs 15 watts. You will be loaned a power adapter that can deliver 50 watts. Voltage, polarity, etc. are all the same compared to the original power adapter. You can connect the borrowed power adapter to your laptop. What will happen? Also explain why you think that.

+ If my laptop needs 15 watt and I borrow an adaptor with 50 watt, it is safe to use, as long as the voltage, polarity, and connector type are correct. Laptops draw only the power they need, Even though the borrowed adapter can supply 50 watts, my laptop will only use 15 watts.

Assignment 3.4: Build your dream PC

Screenshots PC configuration + motivation:

My dream PC (Click the link, please!)

There are a lots of different between my laptop and my dream laptop. The picture above is a detail of my dream PC and if I want to compare, my dream PC is more powerful than my own PC.

Why I chose this system configuration for my dream PC? Because I want it for game. (maybe in the future time, I would be a gamer/streamer on the YouTube and because of that I need a perfect PC for that).

System Information

File Edit View Help

- System Summary
  - Hardware Resources
  - Components
  - Software Environment

Item	Value
OS Name	Microsoft Windows 11 Pro
Version	10.0.26100 Build 26100
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	DESKTOP-7Q74E58
System Manufacturer	ASUSTeK COMPUTER INC.
System Model	ASUS TUF Gaming F17 FX707VU_FX707VU
System Type	x64-based PC
System SKU	
Processor	13th Gen Intel(R) Core(TM) i7-13620H, 2400 Mhz, 10 Core(s), 16 Logical Proce...
BIOS Version/Date	American Megatrends International, LLC. FX707VU.327, 2/29/2024
SMBIOS Version	3.5
Embedded Controller Version	0.72
BIOS Mode	UEFI
BaseBoard Manufacturer	ASUSTeK COMPUTER INC.
BaseBoard Product	FX707VU
BaseBoard Version	1.0
Platform Role	Mobile
Secure Boot State	Off
PCR7 Configuration	Elevation Required to View
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "10.0.26100.1"
User Name	DESKTOP-7Q74E58\Kiarash
Time Zone	W. Europe Standard Time
Installed Physical Memory (RAM)	16.0 GB
Total Physical Memory	15.6 GB
Available Physical Memory	5.75 GB
Total Virtual Memory	18.6 GB
Available Virtual Memory	3.84 GB
Page File Space	3.00 GB
Page File	C:\pagefile.sys
Kernel DMA Protection	On
Virtualization-based security	Running
Virtualization-based security Re...	
Virtualization-based security Av...	Base Virtualization Support, DMA Protection, UEFI Code Readonly, Mode Base...
Virtualization-based security Se...	Hypervisor enforced Code Integrity
Virtualization-based security Se...	Hypervisor enforced Code Integrity
App Control for Business policy	Enforced
App Control for Business user ...	Off

Find what: [   ] Find Close Find

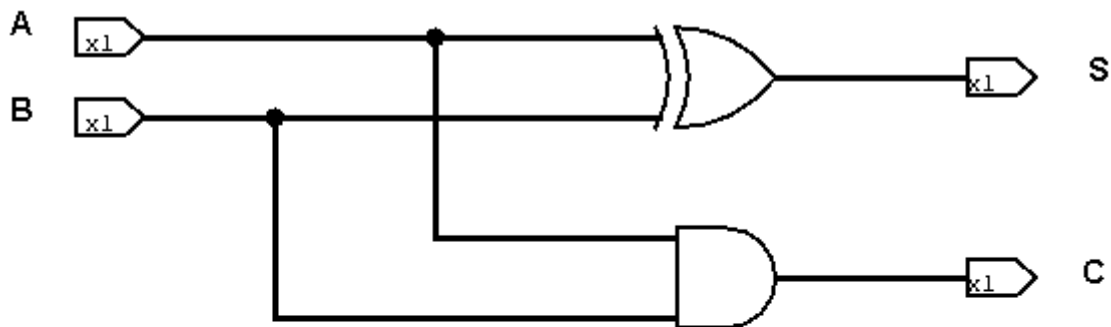☐ Search selected category only   ☐ Search category names only

The picture above is my own PC configuration which has 13 Gen Intel processor with 16 GB RAM and 1TB SSD storage. Also, it has a RTX 4050 for the GPU.

Complete the **half adder**, **full adder** and **4-bit adder** assignment as described in the PowerPoint slides of week 3 in Logisim. Save the chip design and also export three PNG pictures of the separate finished designs. See the PowerPoint slides of week 3.
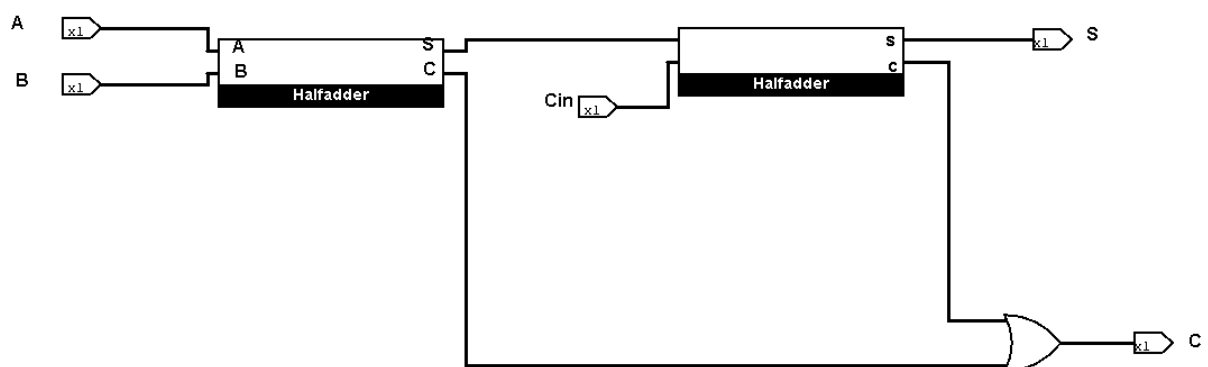
Paste the three exported PNG pictures in here.

Half Adder:

Kiarash Delavar - 568403 - SR
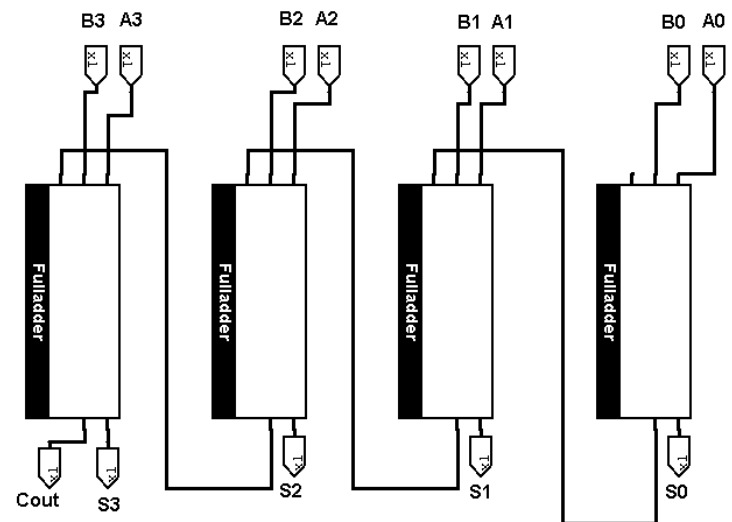
Full Adder:

Kiarash Delavar - 568403 - SR

4-Bit Adder:

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Ready? Save this file and export it as a pdf file with the name: **week3.pdf**